Listing of claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A web-handling cylinder comprising a cylinder having a circumferential surface and a plurality of ~~exposed~~ sensors affixed to or implanted within the circumferential surface for detecting a force applied by a web against the surface, wherein the force-sensitive surfaces of the plurality of sensors are substantially flush with the cylinder surface.

2. (currently amended) The cylinder of claim 1 wherein the ~~at least one~~ plurality of sensors determines a normal force exerted by the web at at least one point on the cylinder's circumferential surface.

3. (currently amended) The cylinder of claim 1 wherein the ~~at least one~~ plurality of sensors comprises ~~a~~ force-sensitive resistors.

4. (currently amended) The cylinder of claim 1 wherein the ~~at least one~~ plurality of sensors comprises ~~a~~ load cells.

5. (currently amended) The cylinder of claim 1 wherein the ~~at least one~~ plurality of sensors comprises ~~a~~ piezo-electric sheet based sensors.

6. (currently amended) A web-handling system comprising:

a) a cylinder including a circumferential surface and a sensing device comprising a plurality of ~~exposed~~ sensors affixed to or implanted within the circumferential surface for detecting a force applied by a web against the surface; and

b) an actuation device, responsive to the detected force, for adjusting the force applied by the web against the circumferential surface of the cylinder, wherein the force-sensitive surfaces of the plurality of sensors are substantially flush with the cylinder surface.

7. (currently amended) The system of claim 6 wherein the sensing device further comprises a processor for receiving ~~an~~ at least one input from the ~~at least one~~ plurality of sensors, processing the at least one input and sending an output to the actuation device.

8. (original) The system of claim 6 wherein the actuation device increases the force applied by the web against the circumferential surface of the cylinder in response to detected web slippage or loss of contact between the web and the circumferential surface of the cylinder.

9. (original) The system of claim 6 wherein the sensing device, together with the actuation device, maintains a set value for the force applied by the web against the circumferential surface of the cylinder.

10. (original) The system of claim 9 wherein said set value comprises a range.

11. (previously presented) A web-handling system comprising:

a) a cylinder including a circumferential surface and a sensing device comprising at least one sensor associated with the circumferential surface for detecting a force applied by a web against the surface; and

b) an actuation device, responsive to the detected force, for adjusting the force applied by the web against the circumferential surface of the cylinder, wherein the actuation device comprises at least one positioning device that changes the position of at least one of a web-supply spool and a web-uptake spool.

12. (previously presented) The system of claim 11 wherein the positioning device changes spool position along a line.

13. (currently amended) A web-handling system comprising:

a) a cylinder including a circumferential surface and a sensing device comprising at least one sensor associated with the circumferential surface for detecting a force applied by a web against the surface; and

b) an actuation device, responsive to the detected force, for adjusting the force applied by the web against the circumferential surface of the cylinder, wherein the sensing device, together with the actuation device, maintains a range of set values for the force applied by the web against the circumferential surface of the cylinder, and wherein the actuation device comprises a first positioning device that changes the position of ~~the~~ a web-supply spool and a second positioning device that changes the position of ~~the~~ a web-uptake spool.

14. (previously presented) The system of claim 11 wherein the cylinder further comprises a cavity, and the web-supply spool and the web-uptake spool are disposed in the cavity.

15. (currently amended) The system of claim ~~10~~ 11 wherein the cylinder further comprises multiple cavities, and the web-supply spool and the web-uptake spool are disposed in separate cavities.

16. (original) The system of claim 6 wherein the actuation device adjusts the rotation of the cylinder.

17. (original) The system of claim 6 wherein the actuation device adjusts the rotation of at least one of a web-supply spool and a web-uptake spool.

18. (original) The system of claim 6 wherein the at least one sensor is selected from the group consisting of a force-sensitive resistor, a load cell and a piezo-electric sheet based sensor.

19. (currently amended) A method for detecting a force applied by a web against a cylinder surface, the method comprising associating a plurality of ~~exposed~~ sensors with a circumferential surface of ~~a~~ the cylinder, wherein the force-sensitive surfaces of the plurality of sensors are substantially flush with the cylinder surface.

20. (currently amended) The method of claim 19 wherein the ~~at least one~~ plurality of sensors comprises ~~a~~ force-sensitive resistors.

21. (currently amended) The method of claim 19 wherein the ~~at least one~~ plurality of sensors comprises ~~a~~ load cells.

22. (currently amended) The method of claim 19 wherein the ~~at least one~~ plurality of sensors comprises ~~a~~ piezo-electric sheet.

23. (currently amended) A method for adjusting a force applied by a web against a cylinder surface, the method comprising the steps of:
a) affixing or implanting a sensing device comprising a plurality of ~~exposed~~ sensors to or within a circumferential surface of a cylinder for detecting a force applied by a web against the surface; and

b) adjusting the force applied by ~~a~~ the web against the circumferential surface of the cylinder in response to the force detected by the at least one sensor, wherein the force-sensitive surfaces of the plurality of sensors are substantially flush with the cylinder surface.

24. (currently amended) The method of claim 23 further wherein the sensing device further comprises a processor for receiving ~~an~~ at least one input from the ~~at least one~~ plurality of sensors, processing the input and sending an output to the actuation device.

25. (currently amended) A method for adjusting a force applied by a web against a cylinder surface, the method comprising the steps of:
a) associating a sensing device comprising at least one sensor with a circumferential surface of ~~a~~ the cylinder for detecting a force applied by ~~a~~ the web against the surface; and
b) adjusting the force applied by ~~a~~ the web against the circumferential surface of the cylinder in response to the force detected by the at least one sensor, wherein the adjusting step comprises changing the position of at least one of a web-supply spool and a web-uptake spool.

26. (original) The method of claim 25 wherein the web-supply spool and the web-uptake spool are disposed in one cavity in the cylinder.

27. (original) The method of claim 25 wherein the web-supply spool and the web-uptake spool are disposed in separate cavities in the cylinder.